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Titolo	A Student's Guide Through the Great Physics Texts : Volume III: Electricity, Magnetism and Light / / by Kerry Kuehn
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Descrizione fisica	1 online resource (XXVI, 471 p. 176 illus., 5 illus. in color.)
Collana	Undergraduate Lecture Notes in Physics, , 2192-4791
Disciplina	530
Soggetti	Physics Philosophy and science Lasers Photonics Atoms History and Philosophical Foundations of Physics Philosophy of Science Optics, Lasers, Photonics, Optical Devices Atomic, Molecular, Optical and Plasma Physics
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	From the Contents: Iron, Loadstones and Terrestrial Magnetism -- The Life and Death of a Magnet -- Conservation of Electrical Charge -- Muschenbroek's Wonderful Bottle -- Thunder and Lightning -- Coulomb's Law -- The Dawn of Electro-Magnetism -- Electric Currents, Magnetic Forces -- Work and Weight -- Kinetic and Potential Energy -- Conservation of Energy.
Sommario/riassunto	This book provides a chronological introduction to the electromagnetic theory of light, using selected extracts from classic texts such as Gilbert's De Magnete, Franklin's Experiments and Observations on Electricity, and Huygens' Treatise on Light. Particular attention is given to the works of Faraday, Maxwell and Heaviside, scientists who unified the formerly separate disciplines of electricity, magnetism and light. Their electromagnetic theory—developed during the 19th century—would lead to the invention of modern radar, electrical power grids, and

telecommunication networks. Each chapter of this book begins with a short introduction followed by a reading selection. Carefully crafted study questions draw out key points in the text and focus the reader's attention on the author's methods, analysis and conclusions. Numerical and laboratory exercises at the end of each chapter test the reader's ability to understand and apply key concepts from the text. Electricity, Magnetism and Light is the third of four volumes in A Student's Guide through the Great Physics Texts. This book grew out of a four-semester undergraduate physics curriculum designed to encourage a critical and circumspect approach to natural science while at the same time preparing students for advanced coursework in physics. This book is particularly suitable as a college-level textbook for students of the natural sciences, history or philosophy. It can also serve as a textbook for advanced high-school or home-schooled students, or as a thematically-organized source-book for scholars and motivated lay-readers. In studying the classic scientific texts included herein, the reader will be drawn toward a lifetime of contemplation. .
